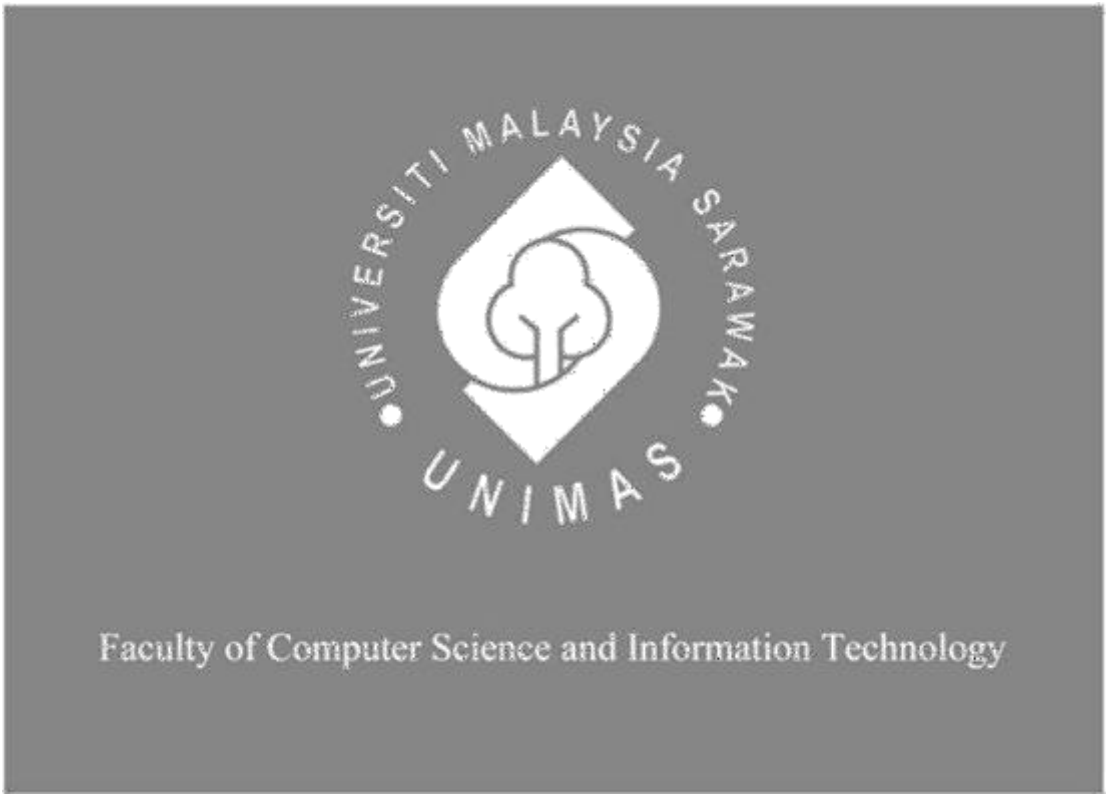

Developing a Development of Community – based Project Management System

Gabriel Anak Taka

Bachelor of Computer Science with Honors

(Information System)

2019

Developing a Development of Community – based Project Management System

Gabriel Anak Taka

This project is submitted in partial fulfilment of the requirements for the degree

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Faculty of Computer Science and Information

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Abstract

Nowadays, proposal submission in Development of Community – based Project Management System is done manually. The applicant needs to download the form and fill in manually and send it to the coordinator for approval which are slow and inefficient. Another problem with this manual system is there is no specific and safe place to store the previous proposal forms and the chance of losing data might lose are high.

Submissions of proposals are very often tedious affair which they are submitted through many complex and tedious process. Development of Community – based Project Management System aims to provide an online proposal submission mechanism to improve the manually submission method. This system allows the proposal submission to be more efficient and greater rigor without compromising on quality. Study through the existing system and manual system have been carried out to make sure the basic function and features need to be used in developing the proposed system. Methodology that been used to develop this proposed system is Rapid Application Development (RAD).

Abstrak

Pada masa kini, penyerahan cadangan dalam Pembangunan Sistem Pengurusan Projek berasaskan Komuniti dilakukan secara manual. Pemohon perlu memuat turun borang dan mengisi secara manual dan hantar kepada penyelaras untuk kelulusan yang lambat dan tidak cekap. Satu lagi masalah dengan sistem manual ini adalah tidak ada tempat yang spesifik dan selamat untuk menyimpan borang cadangan sebelumnya dan kemungkinan kehilangan data mungkin tinggi.

Penyerahan cadangan adalah sangat kerap membosankan yang disampaikan melalui proses yang kompleks dan membosankan. Pembangunan Sistem Pengurusan Projek berasaskan Komuniti bertujuan untuk menyediakan mekanisme penyerahan cadangan dalam talian untuk memperbaiki kaedah penyerahan secara manual. Sistem ini membenarkan penyerahan cadangan menjadi lebih cekap dan lebih keras tanpa menjejaskan kualiti. Kajian melalui sistem dan sistem manual yang sedia ada telah dijalankan untuk memastikan fungsi dan ciri asas perlu digunakan dalam membangunkan sistem yang dicadangkan. Kaedah yang digunakan untuk membangunkan sistem yang dicadangkan ini adalah Pembangunan Aplikasi Rapid (RAD).

CHAPTER 1.0: INTRODUCTION

1.1 Project Title

Development of Community – based Project Management System

1.2 Introduction

During this time of century, website application is widely use nowadays not just as an internal system on a workplace but also as a business where it is cost-effective communication channel. Web application lets the user and the server interact faster and secure with each other to exchange information without worrying about the data loss. However, it is only possible when the information is able to capture and store the necessary data inside the database. Web applications use a combination of server side to handle the storage and retrieval of information and client-side to display the information or data to the users.

Client-side programming will typically using HTML, CSS, JavaScript and AJAX whereas on the server-side programming will use Java, PHP Ruby on Rails and others. There are also many programming frameworks that can be used to make the web application such as Laravel, Angular, Java Spring, Codeigniter and many more. In this project I will use Codeigniter as my framework as it is an open-source web development PHP framework that supports Model, View and Controller (MVC) pattern.

The system that will be developed is Development of Community – based Project Management System which help the user to propose for the community service through an online system. The target user for this project is the applicant that propose the community service by filling up the form in the system. After submitting, the system will directly notify the director and the user through the email. Then the director will look through the proposal and analyses the proposal if it meets the requirement to approve the proposal. If the proposal does not meet the requirement, the director can decline the proposal and this will notify back the applicant about the approval or disapproval of the proposal.

1.3 Problems Statement

Currently the process of applying for community projects in Pusat Kelestarian Komuniti UNIMAS (UNIMAS Community Sustainability Centre – USC) is done manually. Potential applicants will have to download the necessary form and checklist from the centre's website.

This cause problem such as:

1.3.1 Time consuming when filling in the project form

It will take a lot of time for the user as they will continuously to fill in the form using the same information when there are Development of Community. Thus, by using this system, it will save some time as it will auto generate an existing data by getting the data through the database when key in the form.

1.3.2 Hassle in collecting manual data

Some of the data might not be properly captured thus there will be a loss in the data due to manual paperwork proposal. Lack of proper database to store the newly inserted data will cause the old data cannot be trace.

1.3.3 No proper notification mechanism

After the submission of the paperwork from the applicant, some of the application may be overlook by the director. Therefore, a proper notification is just a good alternative way to apply on the system to notify the director after the submission of the paperwork proposal from the applicant through the director's email.

1.4 Scope

This project only limit to the application of applying the proposal, excluding the monitoring process where it involves the financial and project monitoring. The scopes for this project are:

- The applicant can propose for Community Development project through online without downloading the form to fill in manually and directly submit it to coordinator.
- Applicant can create, update and delete the proposal.
- The director/coordinator will receive the notification of the proposal for approval and the applicant will receive an information letter about the approval and disapproval of the project proposal after confirmation by coordinator.
- The created proposal will be stored inside a database and can be viewed by all user.

1.5 Aim and Objectives

The objective of this project is to develop a system that can help the user to apply for the Development of Community by filling the form through a website application system where before this the user need to fill in the form manually.

The objectives for developing this Project Management System:

- To develop a system to automate the application process.
- To create an auto generated notification to the user through email.
- To design database to store the project details.

1.6 Brief Methodology

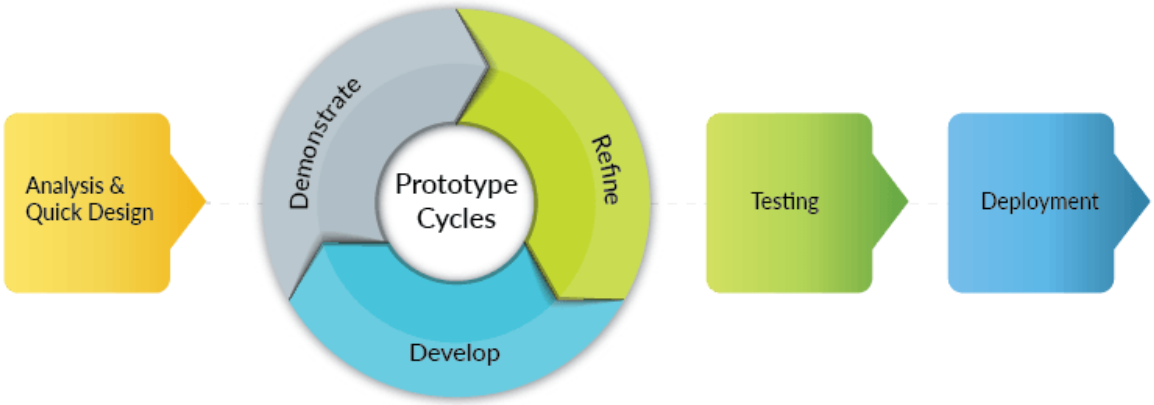


Figure 1.1: RAD Model in System Development Life Cycle approach

In this project, methodology that has been chosen is Rapid Application Development (RAD) where it is flexible and can be adaptive to the continuously changing requirement of the users. Furthermore, this method can be helpful for the developer to improve the system and develop the system to its best quality.

The first phase of this method is analysis and quick design where this phase is use for the developer to collect all the information and requirement that is needed to create the project which is Development of Community – based Project Management System.

Second phase is the prototype cycle. During this phase, there are three steps that consist of build, demonstrate and refine that will iterate if there is changing on the system. Development stage will be carried out once the analysis phase is done then after the development stage is done, the prototype will be demonstrated to the users thus this is the demonstration stage. If the users are not satisfied with the prototype, the system will undergo the refining stage. During the refining stage, any changes in the system will be refined in terms of interface design, features and concept. Then it will demonstrate again to the users once the system is already re-developed. This cycle will keep iterate until the users are satisfied with the final result of the prototype.

After that, testing phase is done to ensure the system is running correctly as expected by the

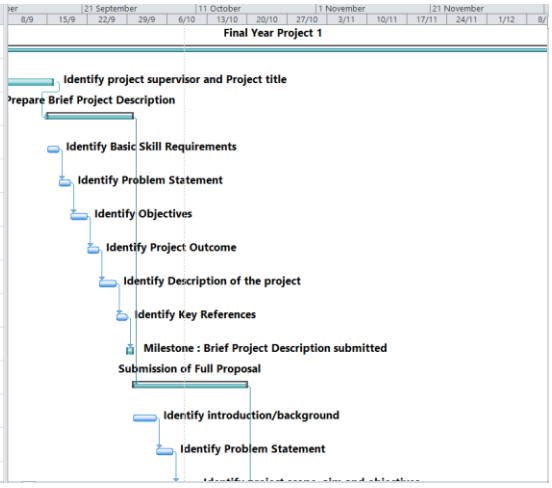
users. Lastly, the implementation phase where the system will be implemented to user environment.

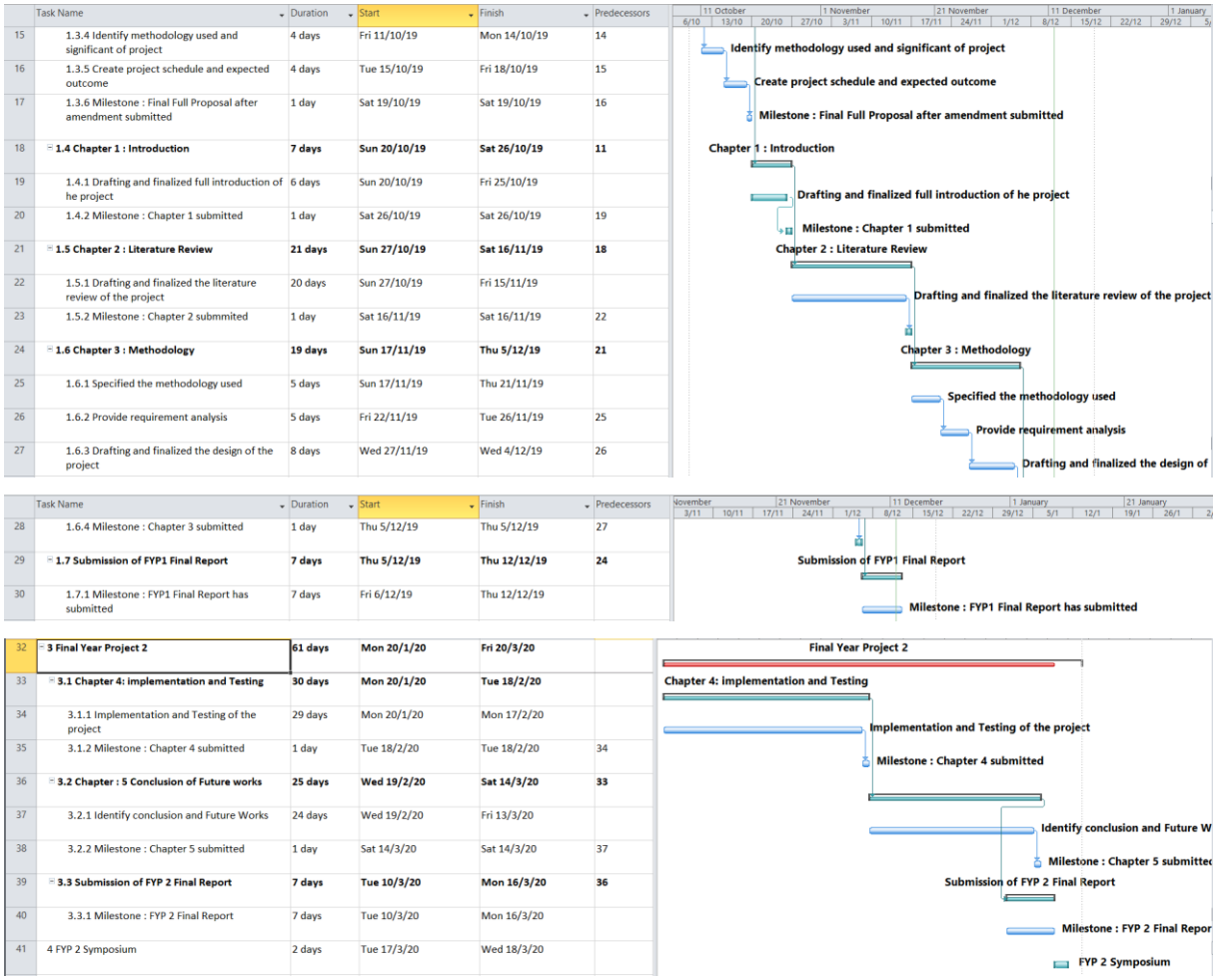
1.7 Significant of Project

The Development Community – based Project Management System is to ease the user fill in the paperwork without doing it manually in an old fashion way. This system is an user friendly system where all the information that need to be fill is easy for the user to understand and straightforward. This system will directly notify the director so that the they will not overlook on the submitted application where the system will notify the director through the email and also notify the user after the director approve or disapprove the proposal. Besides that, this system consists of a huge database that will able to store the data that has been submitted by the applicant without worrying any data loss during submission.

1.8 Project Schedule

	Task Name	Duration	Start	Finish	Predecessors
1	**1 Final Year Project 1**	**100 days**	**Thu 5/9/19**	**Fri 13/12/19**	
2	1.1 Identify project supervisor and Project title	11 days	Thu 5/9/19	Sun 15/9/19	
3	**1.2 Prepare Brief Project Description**	**15 days**	**Sun 15/9/19**	**Sun 29/9/19**	**2**
4	1.2.1 Identify Basic Skill Requirements	2 days	Sun 15/9/19	Mon 16/9/19	
5	1.2.2 Identify Problem Statement	2 days	Tue 17/9/19	Wed 18/9/19	4
6	1.2.3 Identify Objectives	3 days	Thu 19/9/19	Sat 21/9/19	5
7	1.2.4 Identify Project Outcome	2 days	Sun 22/9/19	Mon 23/9/19	6
8	1.2.5 Identify Description of the project	3 days	Tue 24/9/19	Thu 26/9/19	7
9	1.2.6 Identify Key References	2 days	Fri 27/9/19	Sat 28/9/19	8
10	1.2.7 Milestone : Brief Project Description submitted	1 day	Sun 29/9/19	Sun 29/9/19	9
11	**1.3 Submission of Full Proposal**	**20 days**	**Mon 30/9/19**	**Sat 19/10/19**	**3**
12	1.3.1 Identify introduction/background	4 days	Mon 30/9/19	Thu 3/10/19	
13	1.3.2 Identify Problem Statement	3 days	Fri 4/10/19	Sun 6/10/19	12
14	1.3.3 Identify project scope, aim and objectives	4 days	Mon 7/10/19	Thu 10/10/19	13





	Task Name	Duration	Start	Finish	Predecessors
15	1.3.4 Identify methodology used and significant of project	4 days	Fri 11/10/19	Mon 14/10/19	14
16	1.3.5 Create project schedule and expected outcome	4 days	Tue 15/10/19	Fri 18/10/19	15
17	1.3.6 Milestone : Final Full Proposal after amendment submitted	1 day	Sat 19/10/19	Sat 19/10/19	16
18	**1.4 Chapter 1 : Introduction**	**7 days**	**Sun 20/10/19**	**Sat 26/10/19**	**11**
19	1.4.1 Drafting and finalized full introduction of he project	6 days	Sun 20/10/19	Fri 25/10/19	
20	1.4.2 Milestone : Chapter 1 submitted	1 day	Sat 26/10/19	Sat 26/10/19	19
21	**1.5 Chapter 2 : Literature Review**	**21 days**	**Sun 27/10/19**	**Sat 16/11/19**	**18**
22	1.5.1 Drafting and finalized the literature review of the project	20 days	Sun 27/10/19	Fri 15/11/19	
23	1.5.2 Milestone : Chapter 2 submmited	1 day	Sat 16/11/19	Sat 16/11/19	22
24	**1.6 Chapter 3 : Methodology**	**19 days**	**Sun 17/11/19**	**Thu 5/12/19**	**21**
25	1.6.1 Specified the methodology used	5 days	Sun 17/11/19	Thu 21/11/19	
26	1.6.2 Provide requirement analysis	5 days	Fri 22/11/19	Tue 26/11/19	25
27	1.6.3 Drafting and finalized the design of the project	8 days	Wed 27/11/19	Wed 4/12/19	26
28	1.6.4 Milestone : Chapter 3 submitted	1 day	Thu 5/12/19	Thu 5/12/19	27
29	**1.7 Submission of FYP1 Final Report**	**7 days**	**Thu 5/12/19**	**Thu 12/12/19**	**24**
30	1.7.1 Milestone : FYP1 Final Report has submitted	7 days	Fri 6/12/19	Thu 12/12/19	
32	**3 Final Year Project 2**	**61 days**	**Mon 20/1/20**	**Fri 20/3/20**	
33	**3.1 Chapter 4: implementation and Testing**	**30 days**	**Mon 20/1/20**	**Tue 18/2/20**	
34	3.1.1 Implementation and Testing of the project	29 days	Mon 20/1/20	Mon 17/2/20	
35	3.1.2 Milestone : Chapter 4 submitted	1 day	Tue 18/2/20	Tue 18/2/20	34
36	**3.2 Chapter : 5 Conclusion of Future works**	**25 days**	**Wed 19/2/20**	**Sat 14/3/20**	**33**
37	3.2.1 Identify conclusion and Future Works	24 days	Wed 19/2/20	Fri 13/3/20	
38	3.2.2 Milestone : Chapter 5 submitted	1 day	Sat 14/3/20	Sat 14/3/20	37
39	**3.3 Submission of FYP 2 Final Report**	**7 days**	**Tue 10/3/20**	**Mon 16/3/20**	**36**
40	3.3.1 Milestone : FYP 2 Final Report	7 days	Tue 10/3/20	Mon 16/3/20	
41	4 FYP 2 Symposium	2 days	Tue 17/3/20	Wed 18/3/20	

Graph 1.1: Project Schedule Timeline FYP 1

1.9 Expected Outcome

The outcome of this project is to help the applicant to fill in the paperwork with ease by filling the information through the system. Thus, this will help to avoid the data loss when the applicant applied for the Development of Community. This might also help the director not to miss or overlook the application of the proposal by receiving an auto generated notification through their email and also notify the applicant after the director approved or disapproved the proposal.

1.10 Report Outline

1.10.1 Chapter 1: Introduction

Chapter 1 describes the introduction of the proposed system including the problem statement, project scope, brief methodology, scope, significance of the project, project schedule, expected outcome, report outline and summary of the project. The problem statement explains the problem that face by the user using the old manual method and thus provides the main reason this project must be developed. Project scope lists out the limitation of the project and how it will help to solve the problem of the project. Besides that, methodology describes the type of method used to develop the proposed system which is the Agile Method - Rapid Application Development (RAD) Model while the project schedule describes the works within a period that is done and the milestone of the project. Lastly the expected outcome describes the expected results of the proposed system.

1.10.2 Chapter 2: Literature Review

Chapter 2 describe the review based on existing methods or similar system which can be referred on any related journals and articles. In this chapter it will provide a more clearer view of the project. Some of the suggestion and guidelines can be found in this chapter plus the limitations and scope of the existing system is mentioned and discuss as well.

1.10.3 Chapter 3: Requirement Analysis and Design

Chapter 3 describes more on the methodology that is used on the system. Agile Method - Rapid Application Development (RAD) Methodology is applied on this system. This chapter also discuss the way to get the user requirement and analyze the information obtained. After required the user requirement analysis, the design for the proposed system, mainly on database design, for example, Entity Relationship Diagram (ERD), Data Flow Diagram (DFD), Data Dictionary and Flow Charts will be drawn and showed in this chapter.

1.10.4 Chapter 4: Implementation and Testing

Chapter 4 discuss the implementation to take place in the proposed system. The design layout of the proposed system will also be shown in this chapter thus the structure of the system will be easier to understand. Lastly, the importance of testing in developing this system will also be discussed in this chapter.

1.10.5 Chapter 5: Conclusion and Future Work

In this chapter 5, conclusion on the development of the proposed system will be made and the future enhancement of the developed system is being outlined.

1.11 Summary

To conclude this, the developed system is succeed in achieving objectives. This system is built using RAD methodology and it must complete the stages of planning, analysis, design, implementation and testing.

The product output of this system is the user/applicant will not manually fill in the data of the paperwork to proposed the Development Community to send it to the director using the system. This system also will help to notify both of the director and the applicant. This system also will help both of the user and the director to store all of the important data into the database without any data loss. Any past data can be refered back to the saved data inside the database.

Lastly, this web application will help the user meet their requirement and expectation and can give better solution to Development of Community Service in the future thus hope this will provide the user easy and user-friendly system.

CHAPTER 2.0: LITERATURE REVIEW

2.1 Introduction

Purpose of literature review is to study and find suitable features on a specific area of a project research. Things to achieve on literature review is to compare and identify a suitable feature of an existing systems based on selected topic in order to implement the selected features into the proposed systems. Besides, this is to justify the future work of the proposed system.

There are three existing systems that has been reviewed in order to improve the proposed system which are Proposal Submission System – A Content Management System Approach for Proposal Submission, SACLA Proposal Submission System and Intelligent Energy Europe Electronic Proposal Submission Service.

2.2 Background Study

2.2.1 Manual System

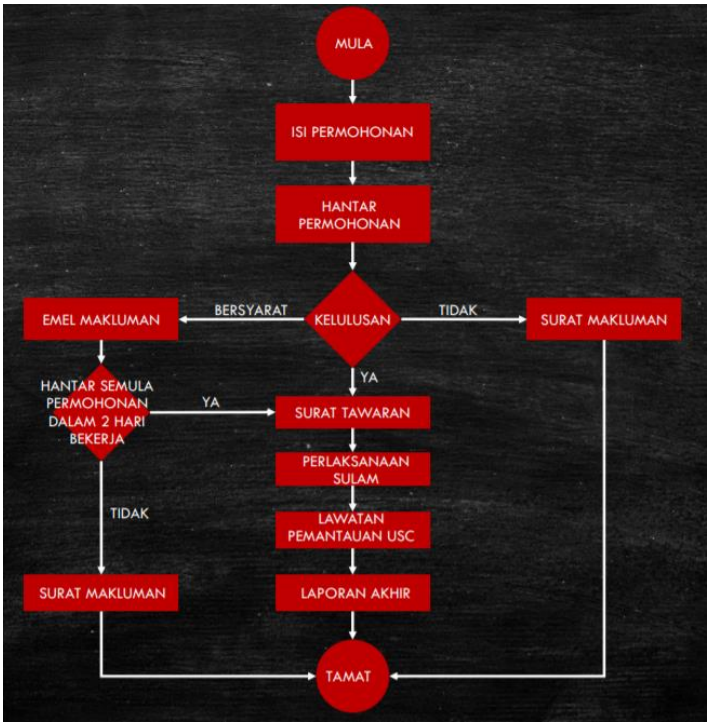


Figure 2.1: Flowchart of Development of Community – based Project Management Manual System for USC

Figure above shows the flow of the manual system of the Development of Community. As you can see the applicant need to download the form from the UNIMAS website to get the form and key in the form manually before submitting it to the coordinator. After submitting it

to the coordinator, it will then be decided to be approve or rejected. When it is rejected by the coordinator, the coordinator will send an information letter to the applicant saying that the project proposal is not approve. Same goes for the approval, the coordinator will send an information letter saying that the project proposal is approved and an offer letter will be given.

2.3 Review Existing Systems

2.3.1 Proposal Submission System – Content Management System

The purpose of this system is to provide an online web-based solution for academic use where the system contributes in complete process of proposal submission and approval, from creation and submission by participants, to comment and approval by coordinator. The unique features of this system is that the proposal template provides functionality to coordinators to create format or templates for proposal submission and with this the coordinator will able to specify requirements needed for proposal of different purposes. Another features is that function of proposal forwarding and submission evaluation of multiple coordinator which will allow the coordinators to forward a proposal to other coordinator as well.

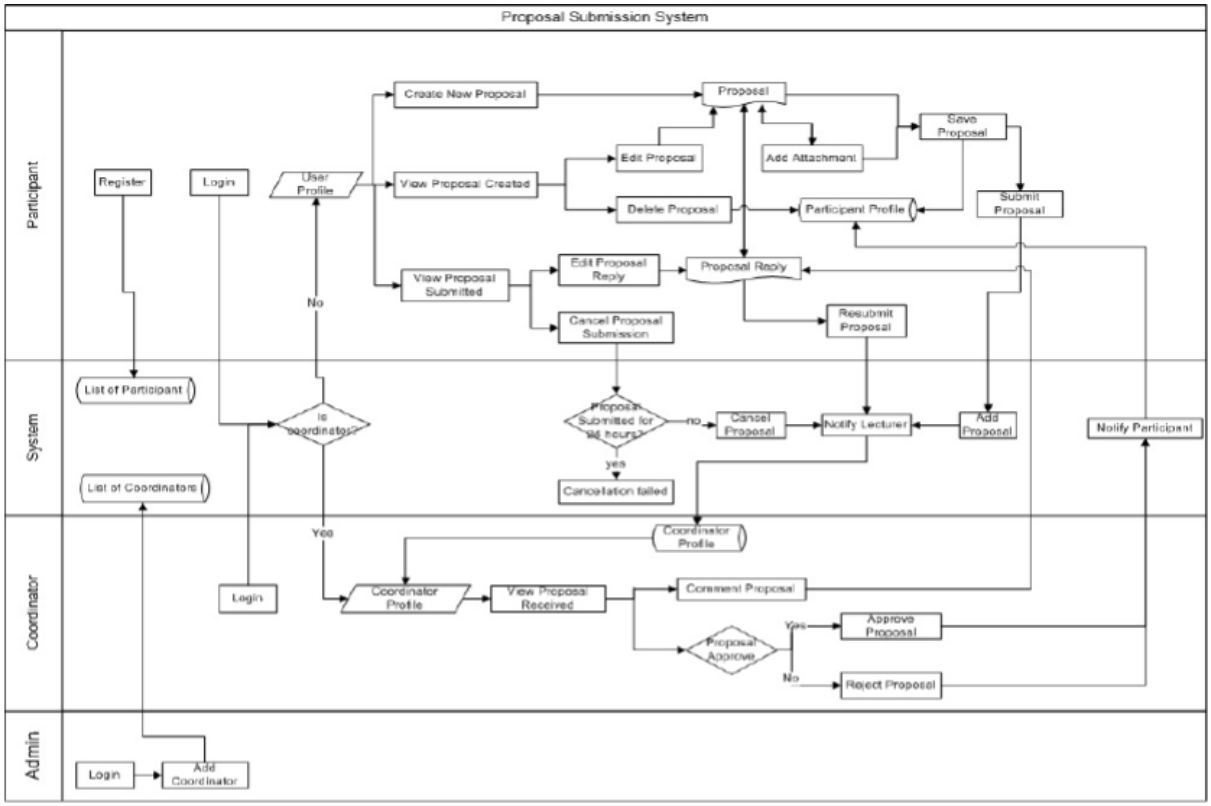


Figure 2.2 Flowchart of Proposal Submission System (Shadlou, Pong & Sukumaran, 2011, p.5)

As shown in Figure 2.1, admin need to add the coordinator and the participant need to register to the system first. For the participant side, the participant can create proposal, view proposal created and view proposal submitted and within the view side, the participant can edit, delete and add attachment for the proposal. After the submission proposal by the participant, it will notify the coordinator through an email which the coordinator can view the proposal either it is approve or rejected by the coordinator. When the participant want to cancel the proposal, it will also notify the coordinator and directly remove the proposal from the coordinator interface side.

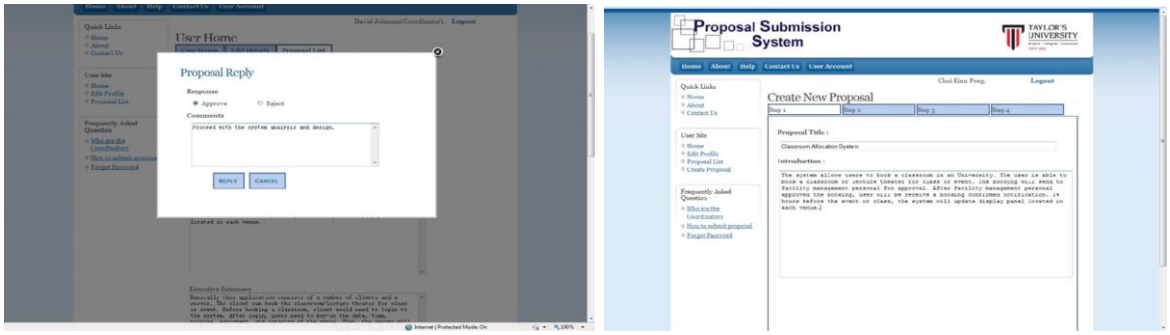


Figure 2.3 Proposal Submission System Interface

After login to the system, the applicant can create a proposal by following each step created in the interface. After submitting the propsal, there will be a notification that directed to the coordinator and from there the coordinator will check the proposal whether they want to approve or reject the proposal by replying the proposal. The drawback of this interface is that, during the filling information on create new proposal, there are no validation error for the applicant. This is to alert the applicant in case they overlook some part to key in before submitting to the coordinator.

Tools use in Proposal Submission System is AMP (Apache, MySQL, PHP) solution stack where it is free open-source where JavaScript and AJAX also included in the building of the system to create and interactive web-based system and more user friendly.

2.3.2 SACLA Proposal Submission System

SACLA Proposal Submission System is created to help the user (project leader) to apply an approval for beamtime of non-proprietary and proprietary research in Japan. This is system is built to ease the users by saving time and avoid data loss by storing the data in the database. This also can avoid the problem of overlook where after submitting the proposal, it will send the email to the coordinator for approval. There are some safety features on the system where

if the user not log out from the system from a short period of time, it will automatically log out for the user for security purpose.

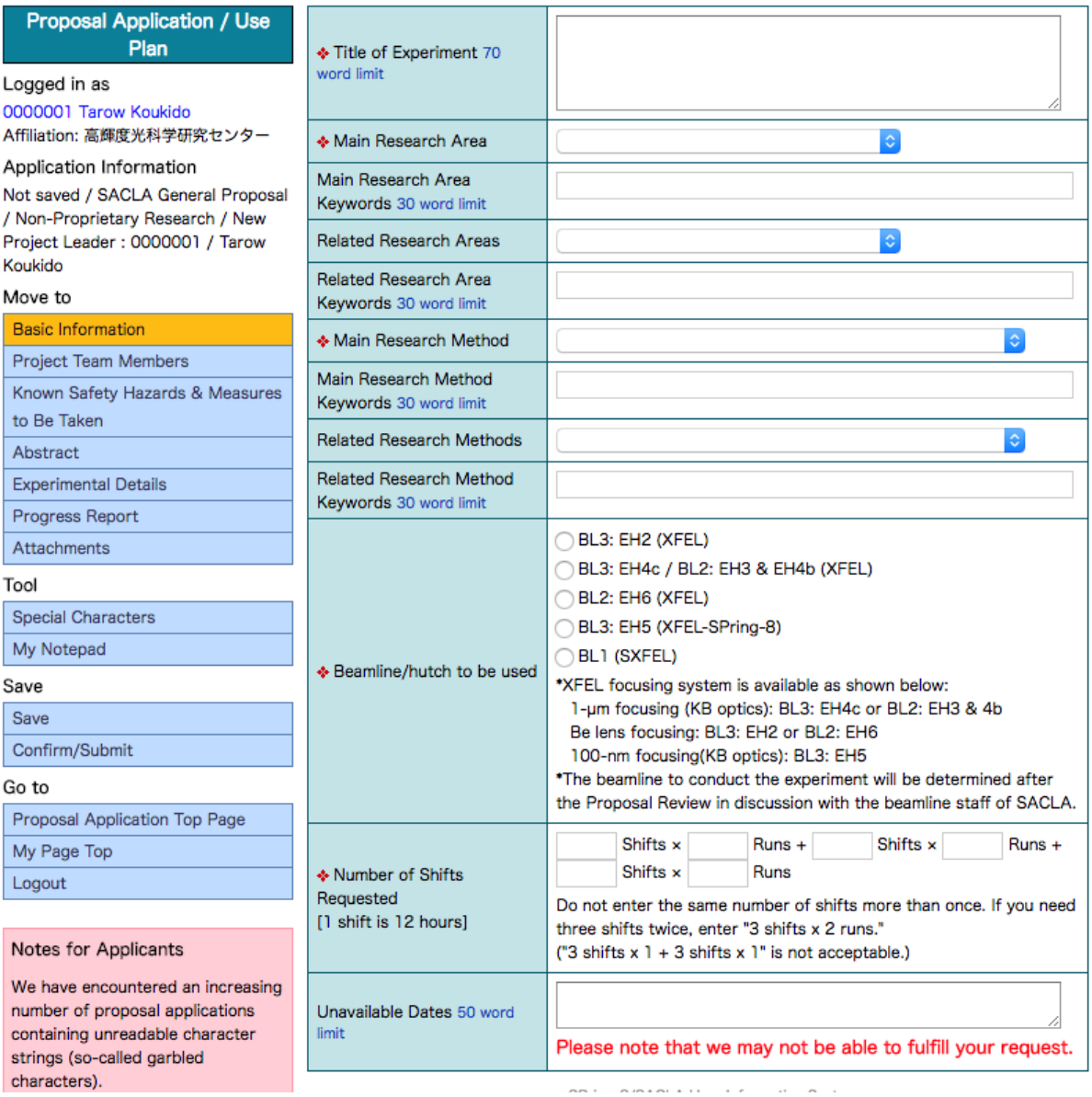


Figure 2.4 Basic Information of Proposal

Applicant need to key in the basic information of their team including all their members and project leaders before filling the other information that they want to propose to the coordinator.